

(*Viverra*, *Paradoxurus*, *Cynogale*, and their allies) have the perineal area provided with scent-glands, situated in the male between the scrotum and the prepuce, which are widely separated. In *Galidictis* and *Galidia* a similar gland is present at least in the female, the position of the prepuce being unknown. In the Hyænas there is a large sac, receiving the secretion of the anal glands, above the anus, the prepuce is far in advance of the scrotum, and the glans penis is long.

Finally, *Cryptoprocta*, which has even been referred to the same family as the Felidæ on account of the misleading character of its dentition, has widely different external genitalia and the anus opening into a large sac.

Thus, if we set aside *Linsang*, *Eupleres*, and *Fossa*, about which our knowledge is defective, it may be seen that the genito-anal area of the Felidæ possesses a combination of characters distinctive of this family of *Æluroidæ*.

VIII.—*On some new Mites of the Suborder Prostigmata living on Lizards.* By STANLEY HIRST.

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THE Acari described below are forms living on lizards, and, with the probable exception of *Pimeliaphilus tenuipes*, they are all true blood-sucking parasites. The species dealt with in this preliminary note will be figured and described in detail in a later paper on parasitic mites.

GENUS *PTERYGOSOMA*, Peters.

Pterygosoma persicus, sp. n.

♀.—*Body* much wider than long. On each side of the anterior end of the *dorsum* there are two patches of very short plumose hairs; these patches being almost continuous with one another, the inner one consists of about 5–8 hairs, the outer of 8–16 hairs. Hairs on rest of *dorsum* very few in number; some distance behind the anterior patches of hairs there is a transverse row of four plain hairs, which are short and widely separated from one another; there are also two or three rather long fine hairs on each side near the margin; posteriorly there are two more pairs of short plain

hairs (one pair placed behind the other); finally, two pairs of short plumose hairs situated near the posterior margin, those of the inner pair being placed on either side of the genital aperture. On each side of the posterior margin there is a fringe of about nineteen or twenty very long hairs, which are quite fine, not being feathered or modified in any way. *Venter* with only four pairs of fine plain hairs, which are of moderate length. There is also a tuft of eleven very long fine hairs on each side of the genital aperture. *Legs* slender and of moderate length; coxæ unarmed, being furnished with long fine hairs.

Length of body .6 mm.; its width 1.15 mm.

Hab. Sixty miles north-west of Kermanshaw, Persia; a few specimens found under the scales of the tail of *Agama nupta*.

Pterygosoma melanus, sp. n.

♀.—This species is not so wide as compared with its length as is usually the case in the genus. On each side of the anterior end of the *dorsum* there is a band of short slender plumose hairs. Hairs on the rest of the *dorsum* very few in number and widely separated from one another; some distance behind the anterior margin there are two pairs of racket-shaped hairs arranged so as to practically form a transverse row, and a little further back there is another pair of similar hairs. Posterior margin furnished with a fringe of about 18–22 hairs, which are rather short and paddle-shaped, the basal portion being short and cylindrical, but the rest of the hair flattened so as to form a rather wide blade-like expansion, which is striated. Hairs on *venter* very few in number, a pair of short plain hairs being situated immediately behind the mouth-parts, and another pair of similar hairs in the middle of the body; posteriorly there are two more pairs of hairs, which have the distal end plumose. *Legs* slender and rather short; coxæ unarmed, being furnished with quite fine plain hairs.

Colour (spirit-specimens) usually black, but sometimes paler.

Length of body .72 mm.; its width 1.1 mm.

Hab. Delfontein, Cape Colony; several specimens found under axillæ and ventral folds of neck of *Agama atra*. Klipfontein, Damaraland; two specimens found on the same host.

Pterygosoma neumanni, Berl.

Hab. Specimens from *Agama coloncrum*, Gooli Mountains, Somaliland.

It is probable that this mite is only a variety of *P. agamae*, Peters.

GECKOBIELLA, gen. nov.

Body long-oval, being much longer than wide, instead of wider than long as is the case in the genus *Pterygosoma*. *Scutum* absent. Numerous short plumose hairs are present on the *dorsum* and sides. *Venter* only furnished with very few hairs. Free portion of *peritreme* rather long and directed forwards. *Coxæ* not nearly so much fused together as is the case of *Geckobia* and *Pterygosoma*, and only furnished with fine hairs.

This new genus is founded for *Geckobia texana*. Banks; as will be seen from the details given above, it is more closely allied to *Pterygosoma* than to *Geckobia*, but differs from the former in the shape of the body, which is longer than wide, instead of the reverse, and in the structure of the *coxæ*, which are only slightly fused with one another.

Geckobiella texana, Banks.

Hab. Duval County, Texas; two adult specimens and numerous larvæ found on *Sceloporus spinosus*, var. *clarkii* (= *S. floridanus*).

Genus GECKOBIA, Mègnin.

Geckobia latasti, Mègn.

Hab. We have specimens of this mite from Castelfusano, Ostia, and also from Lisbon and Seville. These examples were taken from between the toes of *Tarentola mauritanica*.

Geckobia clelandi, sp. n.

♀.—*Body* about as wide as long. Dorsal *scutum* well developed and much wider than long; it reaches its greatest width just before the posterior margin, being angular and salient at this point. The *scutum* is furnished with ten hairs, arranged in two transverse rows, an anterior row composed of four hairs (two being placed close together on each side) and a posterior row of six (three on each side of the *scutum*); these hairs are similar in structure to those on the rest of the dorsal surface, and are fairly

long. A short distance in front of the outermost hair of the hinder row there is a minute rounded structure, which possibly is an obsolete eye. Hairs on rest of dorsal surface fairly numerous, but not placed close together; they are mostly of moderate length and are club-shaped, the distal end being enlarged and plumose. Hairs on venter numerous, but not placed close together; most of them are much smaller than those on the dorsal surface, and have the distal end plumose but not distinctly enlarged; hairs at the sides and hinder end large and club-shaped, however. On each side of the vulva the integument forms a large conical process. Plumose hair on second segment of *palp*, slender, curved, and not very long. *Legs*. Hinder legs not swollen, but they are longer than the front ones. First coxa furnished with two long fine hairs, which are not plumose. Coxæ 2-4 each with two short hairs, which are plumose distally (sometimes there are three on the last coxa). There is a conspicuous club-shaped hair on the dorsal surface of the femora of the legs, and a similar but much smaller hair is present on the anterior surface of the first femur.

Length of body .64 mm.; its width .61 mm.

Colour red when alive (in spirit yellowish).

Hab. Sydney (ii.16) and Narabreen, New South Wales (14. xi. 15); specimens from *Gymnodactylus platurus* forming part of Dr. J. Burton Cleland's collection.

Geckobia indica, sp. n.

♀.—*Body* much wider than long. *Scutum* transversely elongated, being very much wider than long; its posterior margin is divided into two rounded lobes by a distinct indentation in the middle. A minute eye is present on each side near the anterior margin. There are about 34-46 plumose hairs on the scutum, all of them being quite short, especially the posterior ones. Similar hairs are present in the middle of the *dorsum*. Hairs at sides and posterior end of moderate length, slender and blunt; apparently they are not plumose. Hairs of posterior tufts of moderate length. Anterior hairs on *venter* very short and indistinctly plumose. Hairs on rest of lower surface long, slender and pointed. Hairs on second segment of the *palp* quite slender and plumose. *Legs*. Posterior legs longer than the anterior ones, but not much stouter. Spurs on coxæ well developed, being large and stout; there is also a plumose seta on the trochanter and femur

of the fourth leg, but these setæ are much more slender than the coxal spurs.

Length of body ·24 mm.; its width ·375 mm.

Hab. Several specimens found under ventral scales of a gecko (*Hemidactylus gleadowi*) from Upper Sind.

Geckobia papuana, sp. n.

♀.—*Body* much wider than long. *Dorsum* furnished with numerous hairs. At the anterior end there are two groups, each consisting of six stout plumose hairs, which are not very long. Behind them there are numerous very short, pointed, plumose hairs. Hairs at sides and hinder end of body of moderate length, slender, and not distinctly plumose. Hairs of posterior tuft long. Eyes present, but very minute and inconspicuous. Hairs on venter numerous. Anteriorly there is a number of very short plumose hairs or spinules. The rest of the lower surface is densely furnished with hairs, which are shaped rather like long narrow spear-heads, being flattened dorso-ventrally and having the point long and narrow. Last pair of *legs* greatly swollen, the anterior pairs comparatively slender. Coxæ armed with stout spurs, which are curved and plumose; two spurs are present on the second coxa, two on the third, and three on the fourth. There is also a spur on the trochanter and femur of the fourth leg, that on the femur being placed on a large protuberance.

Length of body ·34 mm.; its width ·5 mm.

Hab. Specimens found under ventral scales of a gecko (*Gymnodactylus louisianensis*) from German New Guinea.

Geckobia malayana, sp. n.

♀.—Closely allied to *G. papuana*, sp. n. *Body* much wider than long. *Dorsum* furnished with numerous hairs. Two groups, each consisting of five rather stout plumose hairs, which are not long, are situated at the anterior end of the body, and they are followed posteriorly at a short interval by a pair of similar hairs. Numerous very short plumose hairs, which are pointed, are present in the middle area of the dorsal surface. Hairs at sides and posterior end long, slender, and apparently not plumose. There is a minute but distinct eye on the outer side of the group of stout plumose hairs. Hairs of the posterior tuft very long and slender. *Venter* with numerous hairs. Immediately behind the coxæ there is a band of very short

pointed hairs or spinules; hairs on the remainder of the ventral surface long and very slender. *Legs* of fourth pair much larger and stouter than the others. There is the usual number of spurs on the legs; the one on the femur of the last leg is not situated on a protuberance.

Length of body .28 mm.; its width .49 mm.

Hab. Several specimens found on geckoes (*Gymnodactylus pulchellus*) from the Jalor Caves, Malay Peninsula.

Geckobia boulengeri, sp. n.

♀.—*Body* longer than wide and attaining its greatest width some distance behind the middle. *Scutum* distinct and almost triangular (wedge-shaped); the anterior margin is slightly concave and strongly salient laterally. Ten plumose hairs are present on the scutum, all of them being very short and stout; six of these hairs are situated close behind the anterior margin (almost forming a transverse line), three being placed on each side. Posteriorly there are two lateral hairs on each side, one being situated immediately behind the other on the margin of the scutum. A minute eye is present on each side on the salient portion of the anterior margin. Numerous short plumose hairs are present on the rest of the *dorsal surface*, the anterior ones being usually rather stout, blunt, and very short; the others are more elongated, however. Hairs at the sides and hinder end of the body slender, fairly long, and blunt; apparently most of them are not feathered. Hairs of the posterior tuft long. *Venter* with very numerous contiguous hairs, the anterior ones being short and plumose, the others of moderate length, fine, and not feathered. *Legs.* Anterior legs slender, those of the third pair considerably longer and stouter; whilst the fourth pair are also long and are greatly swollen. Short stout spurs similar to those present in *G. papuana* etc. are present on the proximal segments of the legs.

Length of body .47 mm.; its width .43 mm.

Hab. A number of examples found on a gecko (*Gehyra yunnanensis*) from Yunnan Fu, China.

Geckobia socotrensis, sp. n.

♀.—*Body* wider than long. *Scutum* absent. Anteriorly the *dorsum* is furnished with numerous very short plumose hairs, which are slender, pointed, and subequal in length, none of the anterior ones being enlarged. Hairs at sides and posterior end of body only of moderate length and

often sinuous; apparently they are not plumose. Hairs on *venter* flattened and scale-like as in *G. loricata*, Berl., but much narrower and more elongated (spindle-shaped), and sharply pointed posteriorly. Distal hair on second segment of *palp* short, fairly stout, and plumose. *Legs*. Coxæ furnished with the usual spurs, but they are blunt and not nearly so strong as in *G. loricata*; trochanters also with a short but rather stout seta. All the legs are of approximately the same thickness, the posterior ones being the longest.

Length of body .3 mm.; its width .37 mm.

Hab. A few specimens found under axillæ of a gecko (*Pristurus rupestris*) from Jena-Agahan, Socuotra.

Geckobia loricata, Berl.

Hab. I have examined specimens of this species found under the ventral scales of specimens of *Tarentola mauritanica* from Lisbon and also from the Riviera.

Geckobia australis, sp. n.

♀.—*Body* wider than long. *Scutum* absent. Hairs on the anterior two-thirds of the *dorsum* much more uniform both in size and distribution than in *G. loricata*, Berl., none of the front ones being enlarged, all being very short. Posterior hairs on *dorsum* of moderate length and sometimes plumose, but the feathering is rather difficult to see. Ventral hairs flattened and scale-like, most of them being spindle-shaped and pointed posteriorly; the posterior ones are more elongated, however. The hair on the dorsal surface of the *palp* is stout and plumose. Posterior *legs* longer and stouter than the anterior pairs, those of the fourth pair being considerably swollen. Coxal spurs large and curved; there is also a plumose seta on the posterior trochanters and on the femur of the fourth leg.

Length of body .36 mm.; its width .425 mm.

Hab. Several specimens found under ventral scales of a gecko (*Lygodactylus capensis*), from Beira, Portuguese East Africa.

Genus PIMELIAPHILUS, Trägårdh.

Pimeliaphilus tenuipes, sp. n.

♀.—*Body* oval, being much longer than wide. *Scutum* triangular, the anterior margin almost straight, being very slightly concave in the middle, the posterior end bluntly

pointed; the scutum is furnished with six plumose hairs, a transverse row of four hairs being situated on the anterior margin; the other two a little behind the middle of its length; these hairs are quite long, being slightly longer than the scutum. Arrangement of hairs on dorsum the same as in *P. podapolipophagus*, Trägårdh, and *P. insignis*, Berl. First of all, there is an outer hair on each side situated on the same platelet as the eye, the latter being placed in front of the hair. There are also four longitudinal rows of slender plumose hairs, the outer rows each consisting of two long hairs and a shorter posterior hair, the inner rows each of three long hairs. On each side of the genital opening there are two hairs of moderate length and also an inner border of three short hairs. All these hairs on the dorsal surface are slender and plumose, and their sockets are not enlarged. Hairs on *venter* few in number; there is a pair of short fine hairs between the last coxæ, followed posteriorly by three pairs of plumose hairs. Integument marked with a sculpturing of very fine wavy lines as in *P. podapolipophagus*. Projecting portion of *peritreme* short. *Chelicera* shaped very like that of the species of *Geckobia*, the basal part being short, compact, well defined, and strongly convex dorsally; the rest of the chelicera forming a long slender style, which, apparently, is not bifid at the end as in the two known species of *Pimeliaphilus*, but ends in a single minute tooth or claw, which is slightly curved. *Palp* short: the basal segment is salient laterally and has a sharp prominent transverse ridge on its dorsal surface; second segment dorsally with a long slender plumose hair; the next two segments each with a shorter hair, which is very fine and apparently not plumose. *Legs* long and slender, and furnished with numerous fine plumose hairs. With the exception of the last, each of the coxæ has a pair of short hairs, the inner hair being fine and not plumose, the outer stouter and apparently plumose. There is also a forwardly directed plumose hair on the anterior surface of the third coxa.

Length of body .274 mm.; its width .22 mm.

Colour (in spirit). Body red, but whitish anteriorly and marked with a pale central line both above and below. appendages pale.

Hab. A single example found on a gecko (*Gonatodes albugularis*), from Honda, Magdalena River, Colombia.